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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,862	02/19/2002	Max Roth	032553-021	2349

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EXAMINER

DUONG, THO V

ART UNIT	PAPER NUMBER
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3743

DATE MAILED: 07/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,862

Applicant(s)

ROTH, MAX

Examiner

Tho v Duong

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-14 and 16-24 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the claimed subject matter of “a ring encompassing a toothed place” is not disclosed in the disclosure.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: the reference number of “30E” is disclosed on page 20, paragraph 47, at line 9, but is not disclosed in the drawing. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed subject matter of “mutual spacing” must be shown or the feature(s) canceled from claims 12 and 24. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 9 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed subject matter of “a ring encompassing a toothed place” is not disclosed in the disclosure.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claimed subject matter of “mutual spacing of from 10 to 50 mm (20-30)” renders the scope of the claimed indefinite since the applicant does not disclose in the drawings this physical spacing for the examiner to understand. Even though this term has been described in the specification, there is no reference number or reference of “the mutual spacing” direct to the drawings. It appears in the drawings that there are no spaces between the walls at the connection points.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,2 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi (JP 56091942A). Takahashi discloses a heat exchanger with two joined together walls (4) and between them a flow-through chamber (5), in which the walls are joined together at a plurality of connecting points (7) inside a surface between edges (8) of the heat exchanger wherein the walls (4) are made to mesh with one another at the connecting points (7) inside the surface between the edges (8) and fasten to one another by means of denticulations which is formed by material deformation. Takahashi further discloses (figure 4) that the material deformation is performed in punctate fashion (P1) with a semicircular shape, which inherently has a certain diameter. As regarding the limitation of “3 to 6 mm”, it would have been an obvious matter of design choice to have a diameter between 3 to 6 mm, since applicant has not disclosed that this range solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the diameter disclosed by Takahashi.

Claims 1,3,4,7,8,10,13,14, 16 and 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Feind et al. (US 6,378,604). Feind discloses (figures 12, 14 and 19-21) a method and a heat exchanger kit with two joined together walls (46,10) and between them a flow-through chamber in which the walls are joined together at a plurality of connecting points (40,49) inside a surface between edges of the heat exchanger wherein the wall (46,10) are made to mesh with one another at the connecting points (40,49) inside the surface between the edges of the heat exchanger and are fastened to one another by means of circular denticulations (49,40) which is formed by material deformation. Feind further discloses that the denticulations (40,49) are disposed in at least one of rows and in a rectangular grid pattern and the denticulations (49) are disposed inside an approximately circular indentation (40) of the walls. Feind further discloses (figure 3) a plurality of heat exchangers (10,46,48), which are supported by a connecting mean (frame (19)). Feind further discloses (figure 20) that the two walls are pre-shaped prior to being joined. As regarding claim 10, the denticulation (40,49) appears to be similar to the claimed denticulation in the product claim. Furthermore, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 11 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Ortega (US 4,248,210). Takahashi substantially discloses all of applicant's claimed invention as discussed above except for the limitation that the sheet are copper with a thickness of 0.3 to 0.8 mm. Ortega discloses (figure 3, column 1, lines 33-48 and column 5, lines 50-54) a heat transfer component comprising two thin sheets (56,58) forming a working fluid channel wherein the sheets (56,58) are made out of copper with thickness in range of 0.005 – 0.025 inches to improve heat transfer rate of the heat transfer component and to maximize the material saving due to the fact that copper is very high thermal conductive material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Ortega's teaching in Takahashi's heat exchanger to improve heat transfer rate and maximize the material saving.

Claims 1, 5 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US 4,292,958) in view of Takahashi. Lee discloses (figures 5-11 and column 3, lines 32-49) a solar water heater construction kit comprising a plurality of heat exchangers (10); and plug connectors (26,34) for the connections of the heat exchanger (10); each heat exchanger (10) having a plurality of flat tube members (12) forming flow-through chambers for a heat transfer medium. Lee does not disclose that the tubular member (12) is made of two sheets. Takahashi discloses a water heater having a flat tubular member forming by joining together walls (4) and between them a flow-through chamber (5), in which the walls are joined together at a plurality of connecting points (7) inside a surface between edges (8) of the heat transfer component wherein

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the walls (4) are made to mesh with one another at the connecting points (7) inside the surface between the edges (8) and fasten to one another by material deformation. Takahashi discloses a solar water heater that has flat tubular members forming by joining two sheets (4) to eliminate strains owing to welding and uncertainty of working by joining the sealing parts between the heat transfer medium flow parts and end edge parts of two sheets. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Takahashi's teaching in Lee's water heater to eliminate strain owing to welding and uncertainty of working by joining the sealing parts between the heat transfer medium flow parts and end edge parts of two sheets. As regarding claim 5, Lee further discloses (column 3, lines 11-21) that the flowing chamber of the flat tubular members (12) are exposed to an internal pressure between 130 –150 psi to enlarge the cross area of the chamber to enhance the heat transfer efficiency of water heater and to test the structural integrity of the assembly under pressure. As regarding claim 18, it is well known in the art that a water heater system comprises a pump to move the water within the system. (See US 4,191,329).

Allowable Subject Matter

Claim 15 is allowed.

Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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The non-application of art against claims 12 and 14 should not be construed as an indication that the claims contain allowable subject matter.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ramm-Schmidt et al. (US 5,775,410) discloses a heat exchanger that has protrusions and recesses formed on plates of the heat exchanger to connect the plates together.

Nakamura (JP 404197624A) discloses two molded sheets obtained by compression molding are joined together.

Goodman et al. (US 4,206,748) discloses solar energy collector with collapsible supporting structure.

Dahlgren (US 4,423,772) discloses a plate heat exchanger that has meshed contact areas.

Westlake Jr. (US 3,680,496) discloses two sheets that have denticulations formed on their surfaces to join them together.

Peze (US 5,494,100) discloses a welded plate heat exchanger having circular indentation formed on the plates.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Tho Duong whose telephone number is (703) 305-0768. The examiner can normally be reached on from 9:30-6 PM.

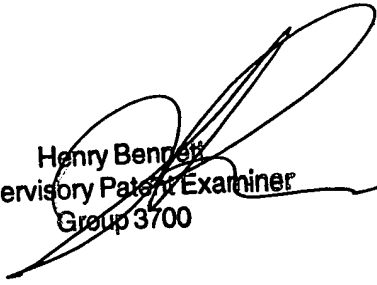
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet, can be reached on (703) 308-0101. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7764.

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Any inquiry of a general nature or relating to status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0861.

Tho Duong

June 27, 2003



Henry Bennett
Supervisory Patent Examiner
Group 3700